What is claimed is:

1. A detoxified pneumococcal neuraminidase or an antigenic portion thereof.
2. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase has approximately 60% of the activity of non-detoxified neuraminidase.
3. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase has approximately 70% of the activity of non-detoxified neuraminidase.
4. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase has approximately 80% of the activity of non-detoxified neuraminidase.
5. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase has approximately 90% of the activity of non-detoxified neuraminidase.
6. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises deletion of at least 7% of the naturally occurring amino acids of non-detoxified neuraminidase.
7. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises deletion of at least 7% of the naturally occurring amino acids of non-detoxified neuraminidase and exhibits approximately 60% of the activity of non-detoxified neuraminidase.
8. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises deletion of at least 7% of the naturally occurring amino acids of non-detoxified neuraminidase and exhibits approximately 70% of the activity of non-detoxified neuraminidase.
9. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises deletion of at least 7% of the naturally occurring amino acids of non-detoxified neuraminidase and exhibits approximately 80% of the activity of non-detoxified neuraminidase.

10. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises deletion of at least 7% of the naturally occurring amino acids of non-detoxified neuraminidase and exhibits approximately 90% of the activity of non-detoxified neuraminidase.
11. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 5 N-terminal amino acids of non-detoxified neuraminidase.
12. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 10 N-terminal amino acids of non-detoxified neuraminidase.
13. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 15 N-terminal amino acids of non-detoxified neuraminidase.
14. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 10% of the C-terminal amino acids of non-detoxified neuraminidase.
15. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 20% of the C-terminal amino acids of non-detoxified neuraminidase.
16. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 30% of the C-terminal amino acids of non-detoxified neuraminidase.
17. A detoxified pneumococcal neuraminidase or an antigenic portion thereof, wherein the neuraminidase comprises a deletion of at least 35% of the C-terminal amino acids of non-detoxified neuraminidase.
18. A composition comprising a detoxified pneumococcal neuraminidase or an antigenic portion thereof and a pharmaceutically acceptable carrier.
19. The composition of claim 18, further comprising an adjuvant.
20. A method of generating antibodies specific to pneumococcal neuraminidase in a subject comprising administering to the subject a detoxified pneumococcal neuraminidase or an antigenic portion thereof.

21. A method of reducing pneumococcal nasal carriage in a subject comprising administering to the subject a detoxified pneumococcal neuraminidase or an antigenic portion thereof.

22. A method of preventing pneumococcal infection in a subject comprising administering to the subject a detoxified pneumococcal neuraminidase or an antigenic portion thereof.

23. The method of claim 22 , wherein the pneucococcal infection is meningitis.

24. The method of claim 22 , wherein the pneucococcal infection is otitis media.

25. The method of claim 22 , wherein the pneucococcal infection is pneumonia.

26. The method of claim 22 , wherein the pneucococcal infection is hemolytic uremia.

27. A method of reducing or preventing pneumococcal nasal carriage in a subject comprising administering to the subject a pneumococcal neuraminidase or an antigenic fragment thereof under conditions that reduce or prevent the nasal carriage.

28. A method of reducing or preventing pneumococcal infection in a subject comprising administering to the subject a pneumococcal neuraminidase or an antigenic fragment thereof under conditions that reduce or prevent the infection.

29. The method of claim 28 , wherein the pneucococcal infection is meningitis.

30. The method of claim 28 , wherein the pneucococcal infection is otitis media.

31. The method of claim 28 , wherein the pneucococcal infection is pneumonia.

32. The method of claim 28 , wherein the pneucococcal infection is hemolytic uremia.

33. A method of reducing or preventing pneumococcal infection in a subject comprising administering to the subject a pneumococcal neuraminidase antibody or a fragment thereof under conditions that reduce or prevent the infection, wherein the administration step comprises contacting a mucosal surface of the subject with the antibody.

34. The method of claim 33 , wherein the pneucococcal infection is meningitis.

35. The method of claim 33 , wherein the pneucococcal infection is otitis media.
36. The method of claim 33 , wherein the pneucococcal infection is pneumonia.
37. The method of claim 33 , wherein the pneucococcal infection is hemolytic uremia.
38. A composition comprising a pneumococcal neuraminidase or an antigenic portion thereof and a pharmaceutically acceptable carrier, wherein the composition is suitable for administration to a mucosal surface.
39. The composition of claim 38, wherein the composition is a nasal spray.
40. The composition of claim 38, wherein the composition is a nebulizer solution.
41. The composition of claim 38, wherein the composition is an aerosol inhalant.
42. A container comprising the composition of claim 38.
43. The container of claim 42, wherein the container is a nasal sprayer.
44. The container of claim 42, wherein the container is a nebulizer.
45. The container of claim 42, wherein the container is an inhaler.
46. A method of generating antibodies specific to pneumococcal neuraminidase in a subject comprising contacting the nasal mucosa of the subject with a detoxified pneumococcal neuraminidase or an antigenic portion thereof.
47. A method of reducing pneumococcal nasal carriage in a subject comprising contacting the nasal mucosa of the subject with a detoxified pneumococcal neuraminidase or an antigenic portion thereof.
48. A method of preventing pneumococcal infection in a subject comprising contacting a mucosal surface of the subject with a detoxified pneumococcal neuraminidase or an antigenic portion thereof.
49. The method of claim 48 , wherein the pneucococcal infection is meningitis.
50. The method of claim 48 , wherein the pneucococcal infection is otitis media.
51. The method of claim 48 , wherein the pneucococcal infection is pneumonia.
52. The method of claim 48 , wherein the pneucococcal infection is hemolytic uremia.
53. A composition comprising a phosphocholine or an antigenic portion thereof of pneumococcal teichoic acid or pneumococcal lipoteichoic acid and a

pharmaceutically acceptable carrier, wherein the composition is suitable for administration to a mucosal surface.

54. The composition of claim 53, wherein the composition is a nasal spray.

55. The composition of claim 53, wherein the composition is a nebulizer solution.

56. The composition of claim 53, wherein the composition is an aerosol inhalant.

57. A container comprising the composition of claim 53.

58. The container of claim 57, wherein the container is a nasal sprayer.

59. The container of claim 57, wherein the container is a nebulizer.

60. The container of claim 57, wherein the container is an inhaler.

61. A method of generating antibodies specific to pneumococcal neuraminidase in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 53.

62. A method of reducing pneumococcal nasal carriage in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 53.

63. A method of reducing or preventing pneumococcal infection in a subject comprising contacting a mucosal surface of the subject with the composition of claim 53.

64. The method of claim 63 , wherein the pneucococcal infection is meningitis.

65. The method of claim 63 , wherein the pneucococcal infection is otitis media.

66. The method of claim 63 , wherein the pneucococcal infection is pneumonia.

67. The method of claim 63 , wherein the pneucococcal infection is hemolytic uremia.

68. A composition comprising a pneumococcal neuraminidase or an antigenic portion thereof, a phosphocholine or an antigenic portion thereof of pneumococcal teichoic acid or pneumococcal lipoteichoic acid, and a pharmaceutically acceptable carrier, wherein the composition is suitable for administration to a mucosal surface.

69. The composition of claim 68, wherein the composition is a nasal spray.

70. The composition of claim 68, wherein the composition is a nebulizer solution.

71. The composition of claim 68, wherein the composition is an aerosol inhalant.

72. A container comprising the composition of claim 68.

73. The container of claim 72, wherein the container is a nasal sprayer.

74. The container of claim 72, wherein the container is a nebulizer.

75. The container of claim 72, wherein the container is an inhaler.

76. A method of generating antibodies specific to pneumococcal neuraminidase in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 68.

77. A method of reducing pneumococcal nasal carriage in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 68.

78. A method of preventing pneumococcal infection in a subject comprising contacting a mucosal surface of the subject with the composition of claim 68.

79. The method of claim 78 , wherein the pneucococcal infection is meningitis.

80. The method of claim 78 , wherein the pneucococcal infection is otitis media.

81. The method of claim 78 , wherein the pneucococcal infection is pneumonia.

82. The method of claim 78 , wherein the pneucococcal infection is hemolytic uremia.

83. A composition comprising a non-phosphocholine antigenic portion of pneumococcal teichoic acid or pneumococcal lipoteichoic acid and a pharmaceutically acceptable carrier, wherein the composition is suitable for administration to a mucosal surface.

84. The composition of claim 83, wherein the composition is a nasal spray.

85. The composition of claim 83, wherein the composition is a nebulizer solution.

86. The composition of claim 83, wherein the composition is an aerosol inhalant.

87. A container comprising the composition of claim 83.

88. The container of claim 87, wherein the container is a nasal sprayer.

89. The container of claim 87, wherein the container is a nebulizer.

90. The container of claim 87, wherein the container is an inhaler.

91. A method of generating antibodies specific to pneumococcal neuraminidase in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 83.

92. A method of reducing pneumococcal nasal carriage in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 83.

93. A method of preventing pneumococcal infection in a subject comprising contacting a mucosal surface of the subject with the composition of claim 83.

94. The method of claim 93, wherein the pneucococcal infection is meningitis.

95. The method of claim 93 , wherein the pneucococcal infection is otitis media.

96. The method of claim 93 , wherein the pneucococcal infection is pneumonia.

97. The method of claim 93 , wherein the pneucococcal infection is hemolytic uremia.

98. A composition comprising a pneumococcal neuraminidase or an antigenic portion thereof, a non-phosphocholine antigenic portion of pneumococcal teichoic acid or pneumococcal lipoteichoic acid, and a pharmaceutically acceptable carrier, wherein the composition is suitable for administration to a mucosal surface.

99. The composition of claim 98, wherein the composition is a nasal spray.

100. The composition of claim 98, wherein the composition is a nebulizer solution.

101. The composition of claim 98, wherein the composition is an aerosol inhalant.

102. A container comprising the composition of claim 98.

103. The container of claim 102, wherein the container is a nasal sprayer.

104. The container of claim 102, wherein the container is a nebulizer.

105. The container of claim 102, wherein the container is an inhaler.

106. A method of generating antibodies specific to pneumococcal neuraminidase in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 98.

107. A method of reducing pneumococcal nasal carriage in a subject comprising contacting the nasal mucosa of the subject with the composition of claim 98.

108. A method of preventing pneumococcal infection in a subject comprising contacting a mucosal surface of the subject with the composition of claim 98.

109. The method of claim 108 , wherein the pneucococcal infection is meningitis.

110. The method of claim 108 , wherein the pneucococcal infection is otitis media.

111. The method of claim 108 , wherein the pneucococcal infection is pneumonia.

112. The method of claim 108 , wherein the pneucococcal infection is hemolytic uremia.

113. A composition comprising a phosphocholine antibody or a fragment thereof and a pharmaceutically acceptable carrier.

114. The composition of claim 113, wherein the composition is suitable for administration to a mucosal surface.

115. The composition of claim 113, wherein the composition is a nasal spray.

116. The composition of claim 113, wherein the composition is a nebulizer solution.

117. The composition of claim 113, wherein the composition is an aerosol inhalant.

118. A container comprising the composition of claim 113.

119. The container of claim 118, wherein the container is a nasal sprayer.

120. The container of claim 118, wherein the container is a nebulizer.

121. The container of claim 118, wherein the container is an inhaler.

122. A method of reducing pneumococcal nasal carriage in a subject comprising administering to the subject a phosphocholine antibody or a fragment thereof.

123. The method of claim 122, wherein the administration comprising contacting the nasal mucosa of the subject with the antibody or fragment thereof.

124. A method of preventing pneumococcal infection in a subject comprising administering to the subject a phosphocholine antibody or a fragment thereof.

125. The method of claim 124, wherein the administration comprises contacting the nasal mucosa of the subject with the antibody or fragment thereof